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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,120	03/27/2001	Kevin K. Chan	YOR920000231US1	8952
21254	7590	11/20/2003	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			ROCCHEGIANI, RENZO	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/817,120

Applicant(s)

CHAN ET AL.

Examiner

Renzo N. Rocchegiani

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 39-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 39-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-18 and 39-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See the following paragraphs for details.

3. Claim 1 recites forming the LTO on the metal back gate. Because the word "on" means in "over and in contact with" (See Merriam-Webster's) this claim, as worded, can only define an embodiment wherein the LTO would be on the opposite side of the back gate from where the substrate to which the gate is bonded. This embodiment is not disclosed in the specification. All the claims dependent upon claim 1 that are not specifically mentioned are rejected as being dependent upon an indefinite base claim.

4. Claim 6 recites the formation of the metal back gate via the UHV process. The specification states that the UHV process is used to form the passivation layer and not the metal back gate, thus this limitation is not supported by the written description.

5. Claim 11 recites forming the LTO on the W. Claim 11 depends on claim 1 and the language suffers of the same deficiency.

6. Claim 18 recites providing a passivation layer to enhance adhesion. The written description is silent as to this function of the passivation layer. The written description recites that the gluing layer enhances adhesion and not the passivation layer.

7. Claim 39 recites that the gluing layer is formed via the UHV process. Again, the specification discloses that the UHV process is used to form the passivation layer and not the gluing layer thus this limitation is not supported by the written description. Claim 40 is rejected on the same bases because it is dependent on claim 39.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 19 recites forming the metal on the oxide and a passivation layer on the metal and an LTO on the metal. Because "on" is understood to mean over and in contact with the passivation layer and the LTO cannot both be "on" the metal layer. Claim 20 has the same problem except that it is with respect to "insulator" as opposed to LTO.

10. Claim 21 recites the limitation "said insulator". There is insufficient antecedent basis for this limitation in the claim. There is no mention of "insulator" in claim 19.

11. Claim 13 recites the limitation "the W-SiO<sub>2</sub> interface". There is insufficient antecedent basis for this limitation in the claim. There is no mention of "W-SiO<sub>2</sub> interface" in claims 1 and 11.

***Claim Rejections - 35 USC § 102***

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claim 19 is rejected under 35 U.S.C. 102(e) as being anticipated by anticipated by U.S. Patent No. 6,218,274 B1 (Komatsu)

Komatsu discloses a process to form a semiconductor device wherein it provides an SOI (item 1 and col. 13, lines 30-33), a gate oxide (item 3) on the SOI, a refractory metal (item 41) on the gate oxide, a passivation layer (item 43) on the metal and an LTO (item 49 and col. 11, lines 14-21) over the metal.

14. Claims 41-47 are rejected under 35 U.S.C. 102(e) as being anticipated by anticipated by U.S. Patent No. 6,238,737 B1 (Chan et al.)

The applied reference has a common assignee and inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this

application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Chan et al. discloses forming a metal back gate comprising W, wherein a passivation layer is formed between a substrate then the metal gate wherein the passivation layer is formed via an ultra vacuum CVD growth of metal-Si-N. (Fig. 1A-B and 2).

### ***Response to Arguments***

15. Applicant's arguments with respect to claims 1-21 and 39-47 have been considered but are moot in view of the new ground(s) of rejection. The examiner has withdrawn the previous rejection has been overcome by the amendments to the claims. The examiner points out that while there is allowable subject matter present in the claims, the language of the claims must be clarified so as to reflect the invention described in the specification. One major problem is the use of the word "on". While this might seem insubstantial it is important that the claims are clear in meaning and the word "on" according to the dictionary (Merriam-Webster's) means "over and in contact with". Furthermore, the examiner cordially asks the applicant to fix the other 112 problems and misstatements that are present in the claims. If further clarification of the above rejections is requested, the examiner encourages applicant to call and discuss the matters over the phone. As to the rejections based on the prior art, the examiner has found this art upon conducting an update of the search. Because these rejections are based on newly discovered art the examiner has decided to make this a non-final action.

***Conclusion***

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renzo Rocchegiani whose telephone number until January 6, 2004 is (703) 308-5839 and after January 6, 2004 is (571) 272-1904. The examiner can normally be reached on Monday through Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith, until January 6, 2004 can be reached at (703) 308-1323, and after January 6, 2004 can be reached at (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

RNR

November 13, 2003



MATTHEW SMITH  
SUPERVISORY PATENT EXAMINER  
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